

May 25, 2007

VIA EMAIL AND REGULAR MAIL

G. William Pennington
California Energy Commission
1516 Ninth Street, MS 28
Sacramento, CA 95814

RE: **2008 California Energy Efficiency Standards**

Dear Bill:

On behalf of the Asphalt Roofing Manufacturers Association (ARMA), I would like to thank you and the California Energy Commission staff for taking the time last week for the industry stakeholders meeting to discuss cool roofing and the 2008 revisions to Title 24, Part 6. We also appreciate that the Commission amended its earlier proposal to one that contains more reasonable requirements that will work toward the needed reduction of energy consumption for the State of California. However, after having had a brief opportunity to analyze the impacts the latest proposal would have on roofing products and consumers, we believe further amendments are appropriate.

Pursuant to that analysis and our meeting, ARMA respectfully requests consideration of the following issues raised at the meeting which require further information or clarification:

Low Slope

- The cost premium numbers for "cool" roofing materials appear to be a moving target, yet, as presented at the stakeholders meeting, the values still fall well below those determined by ARMA for both steep- and low-slope roofing materials. In the case of low-slope, the premiums suggested by the CEC are apparently based on anticipated cost increases associated with installing a "cool" single-ply roof covering in lieu of a "non-cool" built up roof (BUR) covering, but do not take into account the design costs and building modification costs required for such a change, nor do they take into account the shorter life expectancy of the single ply product.

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- Specific to cost premium, it was clear from the information presented in the meeting that the CEC acknowledges that, even at the low cost premium being suggested (\$0.50) there are climate zones where the current measures are not cost effective. For that reason alone, those climate zones need to be exempted from cool roof requirements in 2008.
- ARMA previously raised a concern that if insulation base levels are increased, then the cost justification for cool roofs must be reconsidered, because the dependency of energy savings on surface reflection will be significantly affected by the change in minimum insulation R-value.
- ARMA presented a template proposal to the CEC related to Solar Reflectance Index (SRI). SRI was included sporadically in the information presented. We respectfully request that the ARMA proposals be considered in advance of the formal proposals, as the information provided in the ARMA document offers more trade-off allowance while still saving energy. Our proposal for low slope was minimum SRI=60.
- The CEC has chosen a required value of 0.90 emittance for the Performance Method. In reviewing published CEC emittance data for low-slope products, we believe that this requirement should be reduced to 0.85. Use of SRI=60 would be an even better approach.

Steep Slope

- As discussed above, the cost premium numbers as presented at the stakeholders meeting still fall well below those determined by ARMA. For steep-slope roofing, the cost numbers the CEC presented are based only on the cost to the distributor, but they are not indicative of the actual final price to the consumer, as the ARMA data collection are.
- In the PIER Research presentation for low-rise residential roofing, there were a series of charts related to "Above-deck R-value" (slides 17-20). Do the values in those charts include the R-value of the roofing materials? If so, can you please tell us what base-line value was used and provide those material R-values and the product types that were measured in order to calculate that value? Were they individual shingles or shingle systems as installed?
- Also in the PIER Research presentation, there are a number of references to "Equivalence to Prescriptive Requirements". We applaud the inclusion of these compliance alternatives, but ask that they be clarified and quantified. Specifically, under "Alterations" it needs to be clear that once any one of these equivalences is met, the building's requirement defaults to the minimum roof reflectance. Additionally, there was a discussion in the meeting that an additional route to "equivalence" would be the absence of air conditioning in the building. Please include that in the new compliance alternatives.

- As discussed above, ARMA presented a template proposal to the CEC related to Solar Reflectance Index (SRI). Our proposal for steep slope was minimum SRI=18.
- The baseline for shingle reflectance has been changed from 0.10 to 0.08 without much explanation. Based on extensive ARMA data previously submitted, the real average value for shingles as tested to ASTM C1549 was 0.096, or approximately 0.10. We respectfully request a return to the earlier baseline of 0.10.

Finally, given the debatable cost effectiveness of cool shingles, ARMA would request that the proposal for Steep Slope, residential and commercial, low rise buildings (for both new construction and for alterations) be revised to reflect a consistent prescriptive requirement of **20% reflectance as manufactured** and apply that requirement only in **climate zones 11, 13, and 15** rather than the two-tiered system using initial and aged values as currently proposed and variable climate zones depending on application. The reasons are as follows:

- Reduced complexity in the marketplace. Rather than have two requirements for the different affected areas, one value will lead to less confusion among consumers, contractors, manufacturers, distributors, building officials and other stakeholders.
- Greater consumer color choice which will help to facilitate the purchase and installation of cool shingles. and will greatly reduce inventory issues with manufacturers and distributors. For example, to meet 25% reflectance with current reflective granule technology, at most 5 colors can be made and those are washed out, lighter versions of the colors, not the richer colors California consumers prefer. At 20% reflectance, more colors can be made and they can be richer colors that will more likely be embraced by California consumers.
- Rapid qualification of new products and colors without the necessity of waiting for three-year aged data or being penalized per the LBNL calculated aged SR number approach. Testing data to date over 23 months indicates that reflectance values remain very stable over time and the 20% initial reflectivity would either be maintained or minimally affected.
- The 20% reflectance value would represent a **100% increase** over the average shingle reflectance in the marketplace in California today and would exceed the Energy Star minimum aged value by 33%.

I again want to recognize the progress that the CEC has made toward creating an improved proposal for the 2008 California energy code. We remain hopeful that the new code that is ultimately adopted will be technically sound, cost effective, and make sense for the State of California and the various suppliers of roofing products. It is clear that we are close to language upon which we can all concur, and we look forward to a final draft that is mutually agreeable. In the meantime, we appreciate your timely consideration and

response to the issues raised in this letter, given the very tight turnaround prior to the June 13, 2007 workshop. Please also give consideration to our earlier request to move the workshop to later in June or early July. Depending on your response to this letter, ARMA and other stakeholders will likely need substantial additional time to perform a proper evaluation.

Once again, ARMA appreciates the opportunity to continue to work cooperatively with the Commission as part of the 2008 update process. Please do not hesitate to contact me, or Reed Hitchcock in my absence, if you have any comments or questions.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jim Mattesich". The signature is fluid and cursive, with a large initial "J" and "M".

JAMES MATTESICH
Counsel to ARMA

CC: Reed B. Hitchcock, ARMA
ARMA RSG

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